58-A

SUMMATIVE ASSESSMENT - I - 2017-2018

MATHEMATICS PAPER - I

(English Medium)

PART - A & B

Class : X **(Max. Marks : 40)** **Time : 2.45 Hrs.**

Instructions :

1. **15 Minutes are allotted for reading the question paper (Part A &B) in addition to 2.30 hours for writing the answers.**
2. **Part - A answers should be written in a separate answer book.**
3. **There are three Sections in Part - A.**
4. **Answer all the questions.**
5. **Every answer should be visible and legible.**
6. **There is internal choice in Section - III.**
7. **Part-A & B should be given at the beginning of the exam only.**

Marks : 30 **PART-A**

Section - I

Note: 1. Answer all the Questions.

2. Each Question carries 1 Mark. **4 × 1 = 4**

1. Use Euclid's division lemma to find the HCF of 210 and 55
2. Write the roster and set builder form of the following statement

   "The set of Natural Numbers which are less than 10"
3. Write the standard form (General form) of quadratic polynomial and cubic polynomial in Variable Y.
4. A and B are two sets such that $A \subset B$.

   Draw Venn - diagram for $A \cup B$

Section - II

Note: 1. Answer all the Questions.

2. Each Question carries 2 Marks. **5 × 2 = 10**

5. A = {x / x is prime factor of 30}

   B = {x / x is factor of 24} then find $A \cup B$ and $A \cap B$

6. If α, β are Zeroes of the Quadratic polynomial $f(x) = x^2 - px + q$ then find the Value of $\alpha^2 - \beta^2$

7. Show that any positive integer is of the form $3q$ (or) $3q+1$ for some integer q

8. If the zeroes of the polynomial $x^2 - 10x + 16$ are the dimensions of the rectangle then find its perimeter.

9. Give examples of finite and infinite sets each from your daily life.

Section - III

Note: 1. Answer all the Questions.
2. Each Question has internal choice
3. Each Question carries 4 Marks. **$4 \times 4 = 16$**

10. a) *If* $\log\left(\frac{x+y}{3}\right) = \frac{1}{2}(\log x + \log y)$ *then the find the value of* $\frac{x^2}{y^2} + \frac{y^2}{x^2}$

(OR)

b) A = {x / x is Prime number less than 15}

B = {x / x is composite number less than 15}

(i) $(A-B) \cup (B-A)$

(ii) $(A \cup B) - (A \cap B)$

11. a) Find the remaring zeroes of the polynomial.

$f(x) = 2x^4 - 2x^3 - 7x^2 + 3x + 6$, if its two zeroes are $-\frac{\sqrt{3}}{2}$ and $\frac{\sqrt{3}}{2}$

(OR)

b) i) If $(2.3)^x = (0.23)^y = 1000$ then find the value of $\frac{1}{x} - \frac{1}{y}$

12. a) Verify that $\frac{1}{2}, 1, -2$ are the Zeroes of the cubic polynomial $2x^3 + x^2 - 5x + 2$ and also check the relation between the zeroes and coefficents in each case

(OR)

b) Prove that $\sqrt{7}$ is irrational by proof of contradiction

13. a) Draw the graph of the polynomal $f(x) = x^2 - 2x - 8$

(OR)

b) B is the set of letters in the word "MATHEMATICS"

D is the set of letters in the word "HEAD MASTER"

Represent the following in Venn diagram

i) $B \cup D$ ii) $B \cap D$ iii) B - D iv) D - B

Regd.No. | **58-B** | Marks:

SUMMATIVE ASSESSMENT - I - 2017-2018

MATHEMATICS PAPER - I

(English Medium)

Class - X

Part - B

Time : 30minutes **Marks : 10**

	AS - I						AS - II				AS - III			AS - IV			AS - V		
Q.No	1	5	6	10	11	14-19	7	4	12	20-23	2	3	24-27	8	9	28-31	4	13	32-33
Marks																			
Total																			

Name of the Student : ..... Roll No.: .....

Note:

1. **Answer all question in Part - B**
2. **Each Question has 4 options. Write the capital letter indicating the answer in the given brackets.**
3. **Marks are not awarded for over writing answers.**
4. **All questions carry equal marks.**

14. If $\log_{\sqrt{3}}^{x} = 4$ then the value of x ( )

A) 13 B) 11 C) 10 D) 9

15. If the LCM and HCF of x and 18 are 36 and 2 respectively then the value of x ( )

A) 2 B) 3 C) 4 D) 1

16. If A = {1,2,3,4,5} B = {2,3,6,7} than B - A is ( )

A) {1,4,5} B) {2,3,6,7} C) {6,7} D) {1,2,3,4,5}

17. If P = {a,b,c} then the number of subsects of P is ( )

A) 3 B) 6 C) 7 D) 8

18. If -4 is a zero of polynomial $x^2 - x - (2 + 2k)$ then the value of k is ( )

A) 3 B) 9 C) 6 D) - 9

19. The remainder when $2x^2 + 3x + 1$ is divided by $x + 2$ ( )

A) 15 B) -15 C) 3 D) - 3

20. The Number of decimal places after which the decimal expansion of rational number $\frac{23}{2^2 \times 5}$ will terminate is ( )

A) 1 B) 2 C) 3 D) 4

21. P is the set of factors of 12. Which one of the following is not a member of P? ( )

A) 1 B) 4 C) 5 D) 12

22. The quadratic polynomial whose sum of zeroes is 0 and one of the zero is 3 ( )

A) x^2-9 B) x^2+9

C) x^2+3 D) x^2-3

23. Which of the following quadratic polynomial having zeroes $\frac{1}{4}$ and - 1( )

A) $4x^2+x+4$ B) $4x^2-x-4$ C) $4x^2-x+4$ D) $-4x^2+x-4$

24. If α, β, γ are there zeroes of cubic polynomial $ax^3+bx^2+cx+d\ (a \neq 0)$ then $\alpha\beta+\beta\gamma+\gamma\alpha =$ ( )

A) $\frac{-b}{a}$ B) $\frac{c}{a}$ C) $\frac{-d}{a}$ D) $\frac{-c}{a}$

25. P = {x / x is a whole number between 3.5 and 6.7} then Rorster form of P is ( )

A) {3,4,5,6} B) {4,5,6}

C) {3,4,5} D) {3,4,5,6,7}

26. 'x is element of set P' represents symbolically ( )

A) $x \subset P$ B) $x \supset P$ C) $x \notin P$ D) $x \in P$

27. $2 = 10^x$ represent in logarithmic form for base 10 ( )

A) $\log_{10}^2 = x$ B) $\log_{10}^x = 2$ C) $\log_2^x = 10$ D) $\log_x^2 = 10$

28. Product of first 10 natural numbers is written as $2^a \times 3^b \times 5^c \times 7^d$ then the value of a + b + c + d is ( )

A)17 B) 15 C) 16 D) 14

29. If $x+y=0 (x \neq 0)$ then the value of $\left[\frac{x}{y}\right]^{2014}$ ( )

A) 2014 B) -2014 C) 1 D) -1

30. P is set of Squares , Q is set of Rectagles then $P \cap Q$ ( )

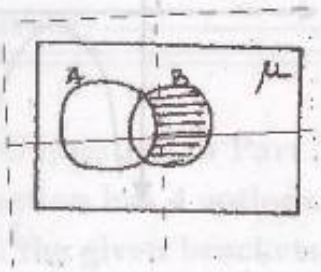
A) P B) Q C) ϕ D) P or Q

31. If length, breadth and height of a cuboid are (x+1), x and (x-1) units then the volume is ( )

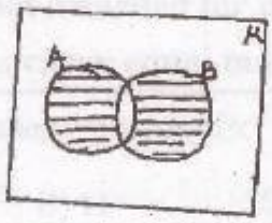
A) $x^3 - 1$ B) $x^2 - 1$ C) $x^3 - x$ D) $x^3 - x^2$

32. Which among the following figures $(A \cup B) - (A \cap B)$ represents? ( )

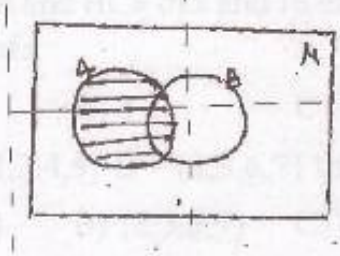
A)



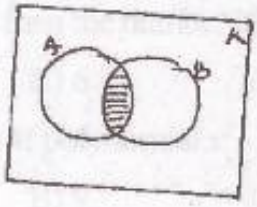
B)



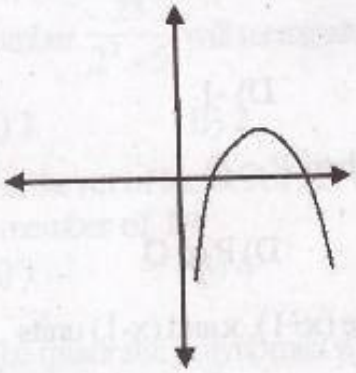
C)

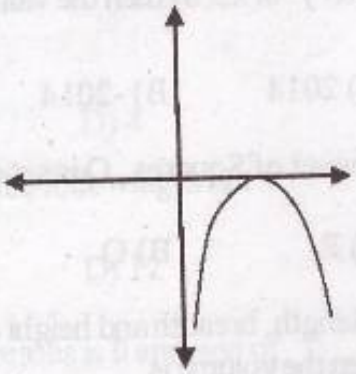


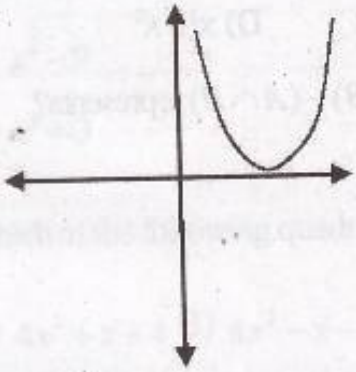
D)



33. Which of following quadratic polynomial having two distinct zeroes ( )

A) 

B) 

C) 

D)